

Los Angeles Olympics: a lot still to be achieved

Everything should be done to ensure that the 1984 Los Angeles Games are held in the spirit of the Olympic ideals of friendship and fair sporting competition, urged the General Assembly of National Olympic Committees (NOC), which has ended its work in Los Angeles and which adopted a final document described as a declaration. According to delegates, the Organizing Committee for the Games still has to do a lot if the Los Angeles Olympics are to be a real festival of young people on our planet.

The desire to cooperate and foster friendly links—such as the leitmotif of talks held here between heads of the Olympic movement. More specifically, there were also talks between Soviet representatives and heads of many international federations, and the chairman of the Olympic committees of Austria, Afghanistan, Belgium, Bulgaria, Finland, Italy, Kuwait, Nepal, Peru, Poland, Mexico and Sweden.

At their press conference the organizers of the 1984 Winter Games at Sarajevo gave extensive information to newsmen.



Moscow Region Spartak clashed with Belgrade Partizan in the Koochell Cup quarterfinals. Photo by Sergei Prokhorov

Basketball

In Moscow's Central Army Club Gym Spartak (Moscow Region) scored their third win in the women's Ronchetti Cup quarterfinals tournament, beating

Belgrade Partizan, 84-68.

In the most Korac Cup Moscow Dynamo outplayed Monaco at home, 88-85, their second win in two games. Dynamo's Birjukov was the top scorer with 27 points in this hotly contested match.

CANADIANS PREPARE FOR SPARTAKIAD

Talks have been held in Montreal on the development of cooperation between the sports organizations of Canada and the USSR, as a result of which there will be more contacts in various kinds of sport, exchange of information, meetings between experts, as well as consultations on vital questions relating to the international sporting movement. Leading figures in the Canadian sporting world and the loc-

al press stress the enormous interest aroused by the cooperation in Canada of the Soviet national ice-hockey team. Canadian sportsmen, it was declared during the talks, will take part this year in the final competition of the 8th summer Tournament of Soviet Nations. Soviet sportsmen-students will attend the Universiade-83, which will be held in the Canadian town of Edmonton.

Venezuela wins Táchira marathon

Marlo Medina, of Venezuela, has won the annual many-day Táchira cycling race in the Andes, covering 1,221 kilometers in 32 hr 14 min 48 sec. Olympic champion Alexander Kravtsov, of the USSR, who led for the better part of the race, suffered a bad cold in the closing stages but still finished an honorable third in 32 hr 45 min. Runner-up Martin Ramirez, of Colombia, clocked 32 hr 17 min. Olympic winner Viktor Manakov, of the USSR, was the most active cyclist. Venezuela took the team title.



The USSR beat Britain in Moscow, 2-1, in the King's Cup elimination tournament. Photo by Boris Koulman

Decisive game for Super Cup ahead

Spanish Barcelona beat British Aston Villa 1-0 in the first game of the Super Cup. Marcos scored the winning goal in the 58th minute of the match. Audiences of around 30,000 watched the game at a Barcelona stadium.

The match, in which the hosts went into the attack was a toughly contested and interesting struggle. Barcelona's back Schuster, who organized most of his team's attacks, was recognized to be the best player. The repeat game will be held in a week's time in Britain.



Aston Villa goalie Nigel Spink jumps in vain to catch the ball fired by Barcelona player Marcos in the second half time of the first leg of the 1983 European Super Cup. Photo AP-TAS

THE YOUNGEST SOVIET TEAM EVER TO FIGHT FOR MEDALS



The dancing duo of Marina Klimova and Sergei Ponomarevko will be making their debut with the national team.

Photo by Andrei Knyazev

Twice Olympic champion, Deputy Head of the Department of Winter Sports of the USSR Sports Committee Alexander Zaitsev has revealed in an MNI correspondent the names of the

skaters who have been chosen for the national team which on January 26 flies out to Dortmund, West Germany, for the European figure-skating championship due on January 31-February 5.

The composition of the USSR team was based on the performance results achieved by the figure skaters, primarily at the "Moscow News" Prize International tournament and at optional championship with account being taken of their national status in various competitions abroad, said Alexander Zaitsev. Marina Klimova and Stanislav Leonovich, silver medalists of the 1982 world and European championships and winners of the "Moscow News" Prize International tournament and at optional championship with account being taken of their national status in various competitions abroad, said Alexander Zaitsev. Marina Klimova and Stanislav Leonovich, silver medalists of the 1982 world and European championships and winners of the "Moscow News" Prize International tournament and at optional championship with account being taken of their national status in various competitions abroad, said Alexander Zaitsev.

In the dances will be the intonated leaders of the team, Natalya Bestemyanova and Andrei Bukin, the second dist of

the world and Europe last year. Coach Yelena Chajkovskaya has an interesting duo — Olga Volynskaya and Alexander Sviridov, who took second place at major tournaments of the season. The debuts of the team—Marina Klimova and Sergei Ponomarevko — won the Alps Cup and took third place in the struggle for the "Moscow News" Prize.

In the men's singles we place our hopes primarily on national champion and "Moscow News" Prize holder Alexander Fadeyev. There are jumps in his programme which only one or two skaters are capable of, Vladimir Kotin is also a hopeful skater.

In the women's singles the team is led by European bronze medalist national champion Yelena Vodorenova. Young skaters Anna Kondrashova and Anna Antonova may well challenge the leaders.

This season the national team is the youngest in the whole history of the European championships, Alexander Zaitsev noted.

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Forum of peace advocates to be held in Vienna

Vienna. How to avert the threat of war in Europe is the theme of a conference sponsored by public organizations in Europe as well as in the United States and Canada, to be held in Vienna on February 6-9 this year. The conference preparatory committee has been set up. It will include people of various political views — noted public

figures, representatives of political circles and men of science and culture from dozens of countries. It is expected that the forum in the Austrian capital will draw over 300 representatives from the 35 nations, which signed the Final Act of the Helsinki Conference in 1975, the forum organizers told a press conference in Vienna.

F. GONZALEZ for disarmament

Madrid. In a recent national television broadcast, the Spanish Prime Minister Felipe Gonzalez touched on a wide range of international and domestic issues. On international affairs, F. Gonzalez noted that the extent to which the threat of war could be removed depended on the success of the struggle for peace fought by the world public. He declared that he was a firm opponent of the deployment of nuclear weapons on Spanish soil and that he would be the first to put his signature to a treaty on universal and complete disarmament, should such a treaty be concluded.

Soviet proposals: honest, realistic and clear

Atlanta, Georgia. A decisive condemnation of the Reagan administration's policy of escalating the arms race and of interfering militarily abroad has come from the 2nd National Conference of the Jobs with Peace Campaign which incorporates such major democratic organizations as the American Friends Service Committee, the US Peace Council, the Mobilization for Survival, the Women's International League for Peace and Freedom, and others.

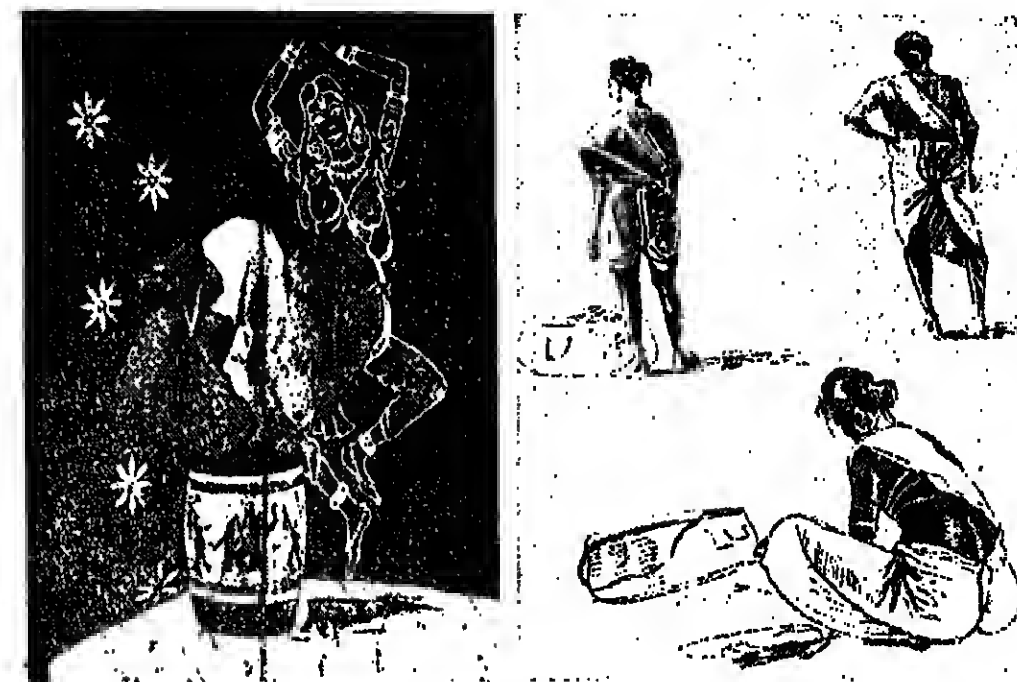
Claude CHEYSSON on Soviet proposals

Paris. The proposals put forward by the CPSU Central Committee General Secretary Yuri Andropov contain "highly positive aspects", particularly the 25 per cent reductions in strategic weapons belonging to the Soviet Union and the United States, said the French Minister for External Relations Claude Cheysson. France, he stressed, is in favour of such an agreement being reached at the Soviet-American talks in Geneva, which would make the deployment of new American nuclear Cruise missiles unnecessary.

Delegates firmly rejected all allegations by the White House that the Reagan disarmament programme is necessary to counter the mythical "military threat" from the Soviet Union. This threat is non-existent, said Frank Clemente, National Coordinator for the Jobs with Peace Campaign, who has recently visited the USSR. The Soviet Union is profoundly interested in peace. It has no intention of attacking the United States or Western Europe. Both the American and the Soviet peoples seek peace, but, as is not the case in the United States, the Soviet government also works for peace. I fully support the new peace initiatives from the Soviet Union. They are much more honest, realistic and understandable than what is being proposed by the Reagan administration.



The Israeli aggressors are hastily building up their military presence on occupied Lebanese soil, particularly in the Bekaa Valley. They have moved military hardware and artillery into the valley's western area, firing positions, and new advanced observation posts are being built at a rapid rate. The Israelis are establishing a "red zone" along their front line, expelling the population and converting abandoned houses into military posts. In the photo: an Israeli occupation force on Lebanese soil.



● Vasily Nikolayev, Bulkh drawing. ● Lev Zuenkov, Fishwives.

INDIA THROUGH THE EYES OF SOVIET ARTISTS

An exhibition of Indian drawings by Soviet artists has opened at Friendship House, in Moscow. It is part of the Soviet-Indian Friendship Week held to mark India's 33rd anniversary as a republic.

On display are some 60 graphic sheets, and bolts done by three Soviet artists, who are also Indian scholars, between the 60s and 70s.

Lev Zuenkov, Vasily Nikolayev, and Svyatoslav Potabenko have repeatedly visited India. They have studied its culture and languages, and many of their works were done in the country.

The portrait of Jawaharlal Nehru during a parade was done in 1964, by Potabenko, who is on the staff of the Institute of



Svyatoslav Potabenko, Rest.

Oricotel Studies of the USSR Academy of Sciences. It so happens that it is the last drawing to have been made of Nehru during his lifetime.

Lev Zuenkov, so Urdu and Hindi translator of the Progress Publishers, has contributed drawings to the exhibition "while Vasily Nikolayev, an artist of the Novosti Press Agency works in the batik techniques which he learnt in India.

The items on view cast light on different aspects of life in India today on the country's culture heritage and in colourful nature.

The exhibition was a great success to India. Many of the drawings were reproduced several times by "The Statesman," "The Indian Express" and the "Notional Herald" newspapers and were much appreciated by Indian readers.

FACTS and EVENTS

● Inflation in Sweden jumped by ten per cent in the past year, according to the nation's central statistical board, and this led to substantial price rises for household commodities. There was a steady, sharp 13.5 per cent rise in the cost of food.

● In the past few years there were a number of strikes in Singapore. The last one was just after the end of the year. It was a strike by the Singaporean Chinese workers. The strike was over the issue of wages. The workers demanded a 10 per cent increase in wages. The employers refused to grant the increase. The strike lasted for several days. It ended with a settlement of a 5 per cent increase in wages.

REAGAN'S 1984 FEDERAL BUDGET

Washington. The draft Federal American Budget for the 1984 fiscal year which President Reagan soon intends to put before Congress, provides for an almost 30,000-million-dollar increase in military expenditure, bringing it up to nearly 300 thousand million dollars. This expenditure is to be spent on an unprecedented 200 thousand million. These figures come from the UPI news agency quoting administration officials.

It follows from the UPI report that the administration still in-

leads to seek the withdrawal for this huge spiral in the arms race by a mere 10 per cent. According to the agency, there is to be a record 20,000-million-dollar cut in various social programmes, particularly in aid to the poor and elderly.

However, such a contribution on the American most open-minded will hardly help the White House escape the gravely ill economy. UPI points out that the administration has already planned a budget deficit of about 160 thousand million dollars.

Round the Soviet Union

● **ASSEMBLY WORK HAS BEGUN ON THE 12TH UNIT AT THE NIZHEKAMSKAYA HYDROPOWER STATION IN THE TATAR AUTONOMOUS REPUBLIC, MAKING PART OF THE RUSSIAN FEDERATION.** It is planned to reach a capacity of 1,746,000 kW in the final stage of the Kame hydropower chain in this five-year plan period (1981-1985).

● **THE ASSEMBLY HAS BEEN COMPLETED OF AN UNDERWATER PIPELINE IN THE CASPIAN SEA TO LINK THE BULLA-MORSE OIL FIELD WITH THE MAHLAND.** The new line will help solve the problem of the delivery of oil to the refinery.

● **TESTS OF ROBOT TRACTORS HAVE STARTED AT THE TESTING RANGE OF THE LEVITAD KIROVSKY ZAVOD ASSOCIATION.** These test tractors can be operated by one driver who controls the vehicles by means of electronic devices. The results obtained from the tests help improve the commercial production of the tractors.

● **A MAP SHOWING DEPOSITS OF DECORATIVE STONES IN ARMENIA HAS BEEN COMPILED BY SCIENTISTS AT THE INSTITUTE OF GEOLOGY AT THE ARMENIAN ACADEMY OF SCIENCES.** The map on which nearly two hundred deposits of valuable facing stone are marked, is designed for use by architects. Apart from the traditional marble and slate, the limestones of the Araks valley in Yerevan will now be decorated with an unusual range of stone: gabbro-diorites, gneisses and transparent obsidians.

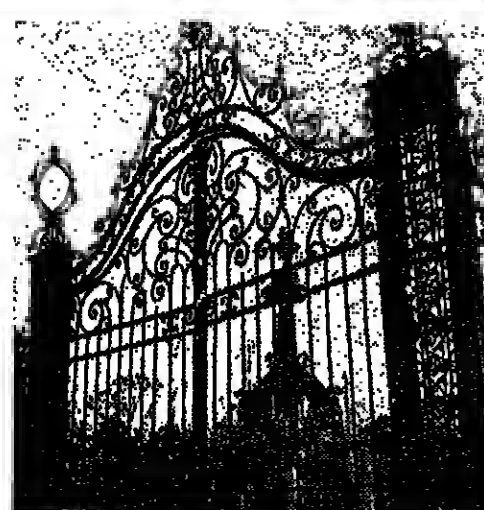
● **THE PASSENGER MOTOR-VEHICLE "KLAVDIYA YELANSKAYA" HAS SET OUT FROM THE PORT OF MURMANSK ON BOARD ARE RELIEF CREWS OF FISHERMEN FOR THE FISHING VESSELS OF THE MURMANSK TRAWLER FLEET WHO ARE FISHING IN THE ATLANTIC.** The relief of crews on site in the fishing grounds is a necessary condition for the fishermen and profitable for the fleet, as the trawlers can stay longer out of sea and not in more fish.

THE VOLUNTEER SPIRIT

Lovers of old Moscow gathered on Sunday morning in January near the Iron Gate at Kizhmitsky Park, north of the Pushy works in the Urals. They came either for an excursion, or to admire the estate which belonged at one time to the Grigoryev family. Gennecyova is active and these people who really love the past came here to enjoy the past.

They had gathered in response to an appeal published in a Moscow newspaper for help in restoring the estate. This was the first appeal of the kind, addressed to young Muscovites, to be printed by the newspaper and the result was beyond all expectations—more than 100 people, not only Muscovites but suburban residents as well, decided to give up their Sunday to the restoration of a cultural monument.

The amateur restorers set to work in the main hall of the central manor-house which was built in the 18th and 19th centuries by the famous Russian architect Matvei Kazakov and Ivan Goltzard.



CRYOGENIC TECHNOLOGY AT WORK

A new generation of electrical machines has been inaugurated with the appearance of a cryogenic generator with superconducting windings designed in Leningrad. After a series of successful tests, the 20,000 kW generator has been approved by a state acceptance commission. It will be installed at one of the city thermal power stations.

The use of superconductivity, when metals and alloys at temperatures close to absolute zero create no electrical resistance, opens up a new future in power engineering, said Academician Gdebov, one of the leading specialists in this area, commenting on the new development.

The problem with traditional machines is that any increase in unit power rating is restricted by the big amounts of materials required, large sizes involved and considerable losses of energy incurred. Cryogenics does away with all these drawbacks. The manufacture of the new generator, for example, required only half of the costly electrochemical steel and the machine itself weighs only 10 tons against 45 tonnes, the weight of a conventional piece of equipment with the same power rating. The new generator is 95.5 per cent efficient.

The work on the cryogenic generator, the most powerful in the world to date, has required that scientists and specialists solve many basically new scientific and technological problems. A more powerful cryogenic generator is being built by the Elektrosila factory.

Takys made fertile

The old view that clay soils which are as hard as rock and which are called takys in Turkmenia are infertile has been disproven by the Institute of Deserts attached to the Turkmenian Academy of Sciences and by other researchers. As a result of elaborate research conducted over a number of years they have come to the conclusion that takys are a form of store-room containing nutritional substances. What now has to be done is to find access to their contents.

Last autumn agriculturalists at the Khatyn collective farm tried ploughing 200 hectares of lands with barless ploughs, washing it free of salt. The rain and snow washed out the clay particles and the takys lost their boggy, clayey quality which is harmful to plants.

The spring rain washed the roots of the furrows in which cotton seeds were sown without the need for any additional processing. The dense clusters of cotton shoots which soon made their appearance confirmed the efficiency of the new technology.

The agricultural development of the takys is now going on in many places in Turkmenia. It is difficult to overestimate the timeliness and importance of this work with takys occupying over 2 million hectares in a republic where they fight for every square metre of arable land. Once the takys are made fertile the harvest of cotton, grain, fodder and other agricultural products will be considerably increased.

FAST EXPANSION AT NORILSK

A 12-storey residential block has sprung up on the outskirts of the town of Norilsk. This is the first building of a new high-rise area in this Arctic city. Norilsk, surrounded by swamps and ore mountains, cannot spread, it can only rise. The foundations of the new buildings which will spread into the area of rock are being made out of reinforced concrete piles. The hills along Lake Bilgoye which were also once considered unfit for construction have started to be built up too—a new street is taking shape there.

But even so, Norilsk, a large Arctic industrial centre with a population of 250 thousand inhabitants, is short of space. This is why it has been decided to build a satellite town, Oymyakon, six kilometres from Norilsk. The deep river Norilka, several lakes and wonderful wild beauty spots, are in the vicinity.

It was under fifty years ago that they first started producing non-ferrous metals at the Norilsk complex which brought the town of Norilsk into being and now it is Oymyakon's turn.

A MAMMOTH GENERATOR BEING BUILT

The Kharkov Elektrosila plant has begun building a one-million-kilowatt generator.

The Kharkov engineers plan to complete the construction of the 500,000 kW atomic power unit. Their operation at the Novovoronezhskaya plant allowed the introduction of the most important, new engineering ideas. The new machine can be built having an atomic reactor as a single unit. This makes the equipment 350 tonnes lighter and the building somewhat smaller. There are fewer automatic devices and personnel too.

A COLLECTION OF RUSSIAN CHINA

A collection of late 18th-early 19th-century Russian china has been added to the Novgorod museum-reserve. Bought from private collectors, it includes over 40 figurines depicting representatives of the lower classes of Russian society at the time.

The origin of the china is of interest. It was made by the multitude of small factories which appeared in the late 18th and early 19th centuries, a period of cultural and economic advance in Russia. The craftsmen, who were mostly people

of simple origin, learnt from and interpreted in their own way the techniques they liked in the china of large factories engaged in mass production.

The picturesque articles representing scenes from everyday life and modelled in the manner of the traditional Russian clay toys, were quite in harmony with buyers' tastes.

Many of the items bear the mark of real talent, and display the sense of humour, typical of Novgorod craftsmen.

ARMENIA'S VOLCANIC TUFFA

Another tuffa deposit at the foot of Aragats has been discovered by geologists in Soviet Armenia. In addition to the already known 100 deposits of this volcanic stone.

Scientists maintain that no lava flow on the planet produces such a durable, lightweight, and strong building material as Armenian tuffa. The best of them is the rose stone of Arlik quarries in the republic's south-west. Most often, millennium-old temples and fortresses were built from the most durable rocks—those of dark hues.

Multi-coloured tuffa, the reserves of which are estimated at 2,000

million cubic metres, is now used not only by the builders of Armenia but also by those of Moscow, Leningrad, Kiev and other cities of the USSR. It is exported to foreign countries too.

Tuffa is not limited to use in construction. In chemistry, for example, it serves as a catalyst of various processes. After an appropriate treatment, tuffa is turned into a soft artificial fibre. Sprayed over fields, it accumulates moisture in its pores and gradually gives it all to the land.

SHRIMPS IN BYELORUSSIA

The shrimps that were introduced into Lake Belye in Byelorussia last spring are just at home there as they are in their native South-East Asia. In numbers they have now nearly reached commercial proportions.

The production of this seafood is not the only purpose of the acclimatization experiment being conducted by hydrobiologists at the Byelorussian Academy of Sciences. Their other interest is ecological. The lake whose water temperature was sharply raised by warm waste from the Berezovskaya thermal power station, has become virtually "dead". So it was decided to populate it with warm water

varieties of fish. But this proved to be insufficient to return normal life to the lake. It was found necessary to introduce organisms capable of processing the sediment at the bottom of the lake which poisons the water. Shrimps were chosen to perform this role in addition, they make excellent food for young fish.

A batch of acclimatized shrimps was sent not long ago to a thermal power station in the Saratov Region. It is also planned to stock the lake in which the Ingula atomic power station is being built with shrimps.

Science and technology

VOLCANO LIFE EXPECTANCY

The Bezymanyan Volcano in Kamchatka will go on raging for almost one hundred years before it starts to "hibernate" for a million years, according to the Institute of Volcanology at the Far Eastern Centre of the USSR Academy of Sciences. These time periods were determined by examining the eruption products thousands of years old, lying at the volcano's foot. In this "pastry-pail", the volcano's chronicle, one can read the history of its formation, the schedule of its activity and the scale of its eruptions.

Bezymanyan is just one of the five live volcanoes in Kamchatka under study by scientists.

The study made use of the new method of loose sediments as well as carbon dating. Eruption rates were determined by examining coal, wood and soil layers. Once the activity cycles and scales are known, it becomes possible to make a long-term forecast of eruptions.

The scientists employed the method to reproduce the picture of volcanic activity in a large area—the Tolbachik zone—over the past ten thousand years. It attracted their attention when new volcanoes appeared there in 1975-76. The research has revealed that the Tolbachik eruption was the largest in the history of the zone.

A GENERATOR ANALYSER

The ITB-204, a small instrument designed by Leningrad engineers, will help detect any flaws in powerful inductogenerators in good time. It is sufficient to bring this pistol-shaped meter close to the winding for it to immediately register an exact temperature of between 0° and 300°C. The sensitive element is provided by a concave reflector with an infra-

red receiver. The reflector acts as a focus for the heat rays and, as a result, indicates a temperature rise at a particular point. An electronic block with integrated circuits transforms the signal into instrument hand readings.

SAFETY FOR MINERS

Compressed air will form a reliable roofing in the coal mines of the future, say Ukrainian engineers in Donetsk. The research which they started in their laboratory was transferred to the Poltavskaya mine where they tested out their idea at a considerable depth.

80-metre-long soft cylindrical bags were first laid on the coal face and then inflated with air. The three-atmosphere pressure turned out to be sufficient to withstand the giant load of almost a kilometre of rock.

Having won miners' approval for their project, the engineers are now preparing the first commercial batch of their products.

MEDIEVAL WARRIOR'S GRAVE FOUND

The ancient Kazakh land has revealed yet more treasure: the grave of a medieval warrior was found under an ordinary looking hillside at the edge of a desert adjoining the southern tip of Lake Balkhash.

After a thorough examination of the site which they dated to the 14th century at the latest, archaeologists found remnants of silk garments embroidered in gold and silver, a belt with gold plaques and a pair of leather boots. They also discovered a long-nosed silver pitcher and a goblet made out of silver and gold alloy decorated with the engraved design of lotus flowers and of a trailing vine.

In the opinion of experts at the Kazakh Academy of Sciences, the rich finds to the clothes and silver objects suggest that the grave belonged to a member of a ruling clan.

VIEWPOINT

NATIONAL INCOME OF THE USSR: THE FIRST FIFTY HUNDRED THOUSAND MILLION ROUBLES

Leonid UMANSKY, Chief of the Department of Statistical Information of the Central Statistical Board of the USSR, answers questions put to him by our correspondent Ivan Khusishev

Q: The report published by the USSR Central Statistical Board says that the USSR national income reached more than 500 thousand million rubles in actual prices in 1982. Could you please give us a more precise explanation, and tell us what that figure represents?

A: The national income is that part of the GNP which is left after deductions of costs for raw materials, fuel, electricity, depreciation, and other expenditure on material production. In the USSR, the national income grows from one year to another. This is an impressive figure. It is customary to view the growth of national income as representing an increase in the country's economic development.

Q: Will you, please, name the major results?

A: 1982 saw continued growth in 2.6 per cent growth as compared to 1981 in industrial production. A number of industries, particularly those which set the pace in science and technology, developed at an accelerated rate. Thus the manufacture of automatic manipulators with programme control (Industrial robots) went up 1.6 times, computers—by 12 per cent, instruments and means of automation—by 7 per cent, metal-cutting tools with programme control—by 15 per cent, turbines by 18 per cent, and major electric locomotives by 2 per cent. In 1982 613 million tonnes of oil, 504 thousand million cu m of gas, and 718 million tonnes of coal, were extracted in our country.

The annual rate of growth in the output of agricultural produce was 4 per cent. There was a noticeable increase in the grain harvest, as compared with 1981. It is noted in the Report that the state grain resources completely satisfy the population's needs for bread and bread products.

The capital investments in the national economy increase from one year to another. In 1982, total capital expenditure—on all sources of financing—exceeded 141 thousand million rubles (in 1981 it amounted to 138.8 thousand million rubles). Nearly 200 new state industrial enterprises were put into operation. Large-scale reconstruction and technical retooling was carried out at existing enterprises.

Q: Up to now, we have been talking about the economic development of the country. In other words, about the results of the labour contribution made by the population who create the national income. What benefits have the creators of the Soviet people themselves received?

A: In the Soviet Union, three quarters of the entire national income is spent on consumption, and with expenditure on housing and socio-cultural construction taken into account—four-fifths of the national income is spent directly on the people's welfare. But what are the figures about here? In the state plan for national economic development which carries a separate article of its own (see the Viewpoint in our next issue).

FROM THE SOVIET PRESS

DEVELOPMENT PROGRAMME FOR THE NORTH WANTED

Almost half of Soviet territory is taken up by Arctic regions, writes SOVIETSKAYA ROSSIYA. Forty years and over four hundred settlements have been built in the north. Vorkuta, Norilsk, Igarka and Mirny have over one hundred thousand citizens each. Two hundred thousand live in Norilsk and 400 thousand in Murmansk. The North is being developed and populated at rates which are higher than those existing in any part of this country.

Fifteen or twenty years ago it seemed that the problems of the North had been solved. But due to lack of foresight in socio-economic planning, some towns experienced considerable difficulties. For example, not 13 thousand, as put the preliminary estimate, but 32 thousand people now live in Tynda, the capital of the Bural-Amur Railway project. A model of the interaction between nature and man-planning systems in conditions of concentrated industrial areas needs to be worked out as do the criteria for comfort in the North and serious medical and biological research undertaken. Nevertheless, development of the vast territory cannot be stopped. About 20 million square metres of housing is to be built here in the very near future.

Researchers, town-planners and builders need to coordinate their efforts, and a comprehensive programme involving them all should be drawn up. Such was the opinion of experts who gathered recently in Norilsk for a meeting sponsored by the Russian Federation State Committee for Construction.

SPACE PHOTOGRAPHY AS AID TO GEOLOGISTS

Space photography reveals to an increasing extent the riches of the earth's subterranean treasures, says V. Volkov, Deputy Minister of Geology, writing in

IZVESTIYA. They span large areas and, therefore, show major geological structures which cannot always be explained by traditional methods of prospecting.

Ground checks on the data received from descending space photographs have been carried out in many regions and have already yielded practical results—the first geological discoveries confirming cosmogeological forecasts. Among such discoveries are the ancient volcanic and tectonic structures governing the distribution of ore and noble metals in the Far East, copper-rich zones in the Bural-Amur Railway area, and a promising concentration of uranium in Yakutia. Possibilities have been revealed for making decisive use of space photography in the search for new deposits in the Siberian platform. It has turned out that many of them follow the lengthy systems of ore veins which are very difficult to discover from aerial photographs or ground-based prospecting. In space photographs these areas show up very clearly and space photography has been used therefore in hydrocarbon prospecting. Optimistic views have now been discovered in this way for oil and gas. As a result, several dozen promising sites have been opened.

GAS SAVES PETROL

All types of power sources the most dynamic development in the 11th five-year plan period is to be the extraction of natural gas. By the end of the period the share of gas in the country's power balance will equal that of oil. This makes the problem of the highly effective use of natural gas particularly important.

There is still, regrettably, considerable inefficiency in the use of gas: it is burnt in boiler rooms for central heating, technological furnaces in the boilers of electric power stations, writes Deputy Minister of the Gas Industry of the USSR Faisla Galimullin in the MOSKOVSKAYA PRAVDA newspaper.

The All-Union Research Institute for Gas is doing a lot of work in the field. It tests new and compressor stations run on gas. They have also made a preliminary estimate of production costs. Costs, with account being taken of the cost of raw gas, amount to 55 roubles per tonne of conventional fuel, whereas a tonne of the A-76

petrol costs 133 roubles. This does not mean, however, that the entire difference in cost will be profit—the increased weight of fuel receptacles, the decreased leeway of run from one-time fuelling will raise the price of gas, though in general there will be a 10 to 12 per cent decrease in the costs of transport work of motor enterprises. In other words this amounts approximately to a 300,000 to 350,000 roubles saving a year per every thousand vehicles. But obviously the most serious advantage of gas-powered vehicles consists in the saving of liquid fuel, the minister points out.

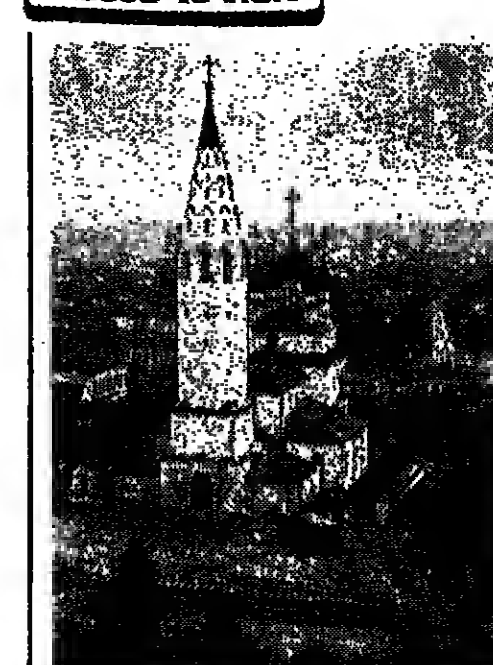
CLUB FOR LARGE-SIZE FAMILIES

Club council chairman T. Demchenko talks in STROITELNAYA GAZETA about an unusual club—for large-size families. It was created two years ago in Leningrad. Once a month, each second Sunday, 200-300 mothers of large families (a large-size family is one in which there are no less than four children, with the smallest being not more than 12) and even several fathers, come to the House of Culture for our club meetings, he writes. These occasions are looked on by our members as a holiday or a rest—you can take along children—even all of them at once. While the mother talks to a doctor and gets advice from psychologists or lawyers or voices a film, the children will be looked after by teachers and will also be provided with something of interest to do.

And yet mothers don't just come here to spend their spare time in a useful way both for themselves and their children. What then attracts them to such meetings? Despite the fact that a mother's rights are protected by Soviet law and special provision is provided by the state for mothers of many children, there are always plenty of problems in large families.

Our club tries to help overcome such difficulties. We run a special survey among club members to try and determine those fields in which most effort is needed. The mothers of large-size families in Leningrad soon caught on: they had plenty of experience to share and realized they could be of help to one another, the paper concludes.

Places to visit



● An overall view of the village of Palekh. In the church in the foreground, there is a collection of ancient Palekh-style icons on view. ● A miniature, "The Russian Field".

PALEKH

In recent years, Intourist has included in its itineraries several places where a few centuries ago folk arts and crafts were born. One such place is Palekh, where they do miniature paintings on black lacquer carrels, powder boxes, notebooks, albums and decorative panels. The articles produced by the skilled craftsmen from Palekh are called after the village where they were made.



● An overall view of the village of Palekh. In the church in the foreground, there is a collection of ancient Palekh-style icons on view. ● A miniature, "The Russian Field".

Palekh is four hundred kilometres north-east of Moscow. When in the 13th century the Tatars plundered and destroyed the cities of Vladimir and Suzdal, a lot of the townsfolk took shelter in remote forests. Among them were many masters of lacquer painting. It was they who founded the village of Palekh.

Since early times, Russian history and the present-day life of this country are among the subjects chosen by Palekh painters. A new workshop has been erected in Palekh and an art school where the best elements of Palekh art are now being taught to a third generation of artists. Today, there are more than 100 miniature workshops in Palekh.

ENTERTAINMENT

Theatre, Cinema and TV Stars

BORIS AKIMOV



● Boris Akimov dancing Crassus in Aram Khachaturian's ballet "Spartacus".
Photo by Georgi Shteyn

When Boris Akimov, one of Marius Petipa's best students, graduated from the Moscow Ballet School in 1953 and joined the Bolshoi Company, it seemed he could tackle anything. All roles were within his grasp—lyrical, comic, grotesque and character.

It so happened that when Akimov was preparing his first major part—that of Iphigenia in "The Hippolyte and Menelaus" by Rodion Shchedrin, the Bolshoi was rehearsing Aram Khachaturian's "Spartacus". Little time was left before the first night and yet there was still no second dancer for Crassus. The part was danced by Liya in the male cast. He suddenly suggested his student. The director did not readily agree, but Liya insisted and had his way.

"At first I looked at the part from the choreographic point of view only. I wanted to perform it at a very high technical level and then to brush it up with acting," said Akimov about this part. And that was how he became Crassus—cruel, cold and ruthless.

Soon afterwards Akimov danced the part of the Evil Genius in Pyotr Tchaikovsky's "Swan Lake" produced by Yuri Grigorovich.

All of a sudden... Akimov felt strong pains in the leg. That was when his willpower and strength of spirit came into their own. Akimov could no longer dance. He took a rehearsal class. His classes were so interesting that Maya Plisetskaya, Vladimir Vasiliev and Mikhail Lavrovsky came to watch. He drew up a strict recovery schedule for himself and stuck to it firmly. Eventually the time came when he was practicing again at the bar and then to the middle of the floor. Finally there was a performance: he danced the Prince in "Swan Lake". Admiring his easy, elegant movements, few people in the audience realized that there had been a two-year break since he was last on the stage and that he had suffered a heavy leg injury.

Another ballet by Grigorovich—"Ivan the Terrible" by Sergei Prokofiev brought Akimov great artistic satisfaction. He danced Prince Kurbsky in the production. He took time to work as the part studying documents, fiction and letters—everything is fact but concerned Kurbsky and his age.

"I wanted," he recalls, "to create the image of a gallant, handsome and courageous prince; to present to the audience a live man with all his mistakes, delusions and unrequited love, and to render all this in movement, via any dance." Akimov showed the strong and passionate character of a man who had lost his entire land by force of fatal circumstance.

His latest parts are a duet with Alla Mikhailchenko in the ballet "These Fascinating Sounds" directed by Vladimir Vasiliev after music by Smetana; and the part of Khorud in "The Indian Poem" by Ulugbek Musayev—a symbolic image of evil force, a whirlwind, a tornado.

While dancing at the Bolshoi, Akimov graduated from the ballet department of the Moscow Institute of Dramatic Art. He now teaches a senior course of choreographers.

Margarita ANOKHINA

The Dom Cathedral organ to sound again

The famous Dom Cathedral organ in the Latvian capital of Riga will be 100 years old in January, 1984. Last year the citizens of Riga and guests to the town were unable to listen to the wonderful organ concerts in the Dom Cathedral, said V. Karpis, Latvian Minister of Culture. The organ was dismantled and sent for repairs.

Today the parts of the unique musical instrument have arrived

back from Holland. Dutch craftsmen—the best restorers of old organs—have started to assemble the complex mechanism. Then the instrument has to be adjusted and tuned. The adjustment of such complex instrument requires virtuoso craftsmanship. One has to achieve irreproachable sound in all the 6,988 pipes, which are different in pitch and physical volume, capable of reproducing all the

instruments of a symphony orchestra, the whole range of the human voice, the noise of the sea, and many other sound effects.

It is thought that this difficult and very responsible job will be over in the second half of 1983, thus the organ should be played again before it is 100 years old and the vaults of the wonderful hall will ring out once more classical and modern music.

THE WORLD OF

The works by Fyodor Konstantinov which are on view at an exhibition which has opened in the halls of the USSR Academy of Arts, at 21 Kropotkinskaya Street, represent an invitation into the world of his nature.

Konstantinov is widely known in this country and abroad as an illustrator. In his sketches to art-

BOOK ILLUSTRATIONS

standing works of literature the artist conveys the spirit of antiquity and the Renaissance, of Ancient Rus and the Pushkin epoch. Konstantinov has illustrated, among other things, Fyodor's "Odes", "The Legend of Thyl Ulenspiegel" by Charles Collier, "Mitsyri" by Lermontov and "Crime and Punishment" by Dostoyevsky.



Dmitry



The Volga River in March

SONGS OF A SWEDISH TROUBADOUR

"A Troubadour from Stockholm" is a play about the life of the great Swedish poet of the 18th century Carl Michael Bellman which had its first night recently at literary-drama studio, uniting actors from various Latvian theatres.

However, this time round the main role was entrusted not to a professional actor but to writer I. Ivanovsky who translated into Russian C. Bellman's main works. For his translations he was elected member of the Bellman Society in Stockholm.

Carl Michael Bellman is as great a phenomenon for the Swedes as Pushkin is for us, says Ivanovsky. His poetry moves us and has a fresh ring to it even today, two centuries later.

Ivanovsky has completed work on an anthology of Swedish poetry, embracing several centuries—from folk ballads to present-day works.



Is the photo: on the film set.

'THANK YOU, RATIL'

In Tbilisi, the Georgian film director Georgi Kalatoshvili has started shooting a colour movie, "Thank you, Ratil". The film is based on the novel by Grigolashvili and the film "The Indian Poem" by Ulugbek Musayev—a symbolic image of evil force, a whirlwind, a tornado.

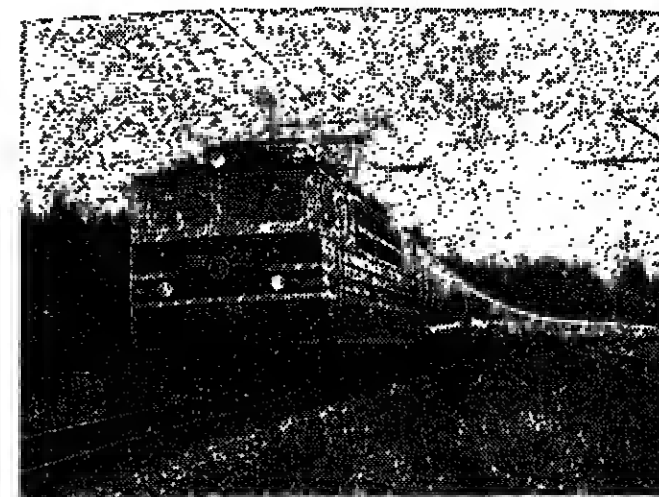
While dancing at the Bolshoi, Akimov graduated from the ballet department of the Moscow Institute of Dramatic Art. He now teaches a senior course of choreographers.

FACTS and EVENTS

Films. Following the results of a survey carried out among Romanian film critics by the Bucharest "Cinema" magazine, Valera Solovoi has been voted best film actress of 1982 for her performance as Olga in the film "Several Days in the Life of L. L. Oshonov". This Soviet film was shown with much success on Romanian screens.

Restoration. Restoration work is almost finished on the half of the Church of the Presentation of the Blessed Virgin in Baryshi, Moscow. This 17th-18th century monument is situated in a state-protected zone incorporating Khamenitsky and Chernyshevsky streets. The next stage of restoration involves the main white-stone building of the church which when fully restored should become a major attraction of this ancient corner of Moscow known since the 16th century under the name of Baryshi.

BUSINESS



With extensive participation of foreign firms, the USSR developed the S-1 electric locomotive for Finnish railways. V/O Demoproexport has already sold Finland a hundred such locomotives.

FIRST CONTRACTS OF 1983

In the Soviet Far Eastern city of Nakhodka, representatives of Dalnizorg and the Japanese firm of Chori have signed the first contracts of the year for mutual deliveries.

In exchange for timber, fish and iron, Chori supplies clothing, fabrics shoes and china to the Soviet Far East.

A demonstration show of goods offered by Chori to its partners in 1983 was held in the Dalnizorg showroom in Nakhodka. A representative of Chori said:

"This time we have about 500 samples of our goods on view. More than 30 per cent of them are new. We have been cooperating with Dalnizorg for over 15 years and have come to the conclusion that it is a reliable and respectable partner. Our

1982 trade with Dalnizorg was seven million dollars.

The general director of Dalnizorg Valentin Kolychev says:

"Though we started off our 1983 business contacts with Chori, we invite all businessmen for talks. Our showroom is at their disposal for the choosing of samples. We are going to engage in this type of operation with other firms too.

We are interested in the development and expansion of coastal trade and do everything possible to increase trade and our list of goods. The total volume of Dalnizorg's trade turnover with Japanese firms and cooperatives exceeded 100 million dollars in 1982. And this figure is to go up.

Yevgeny DUGAYONKO

Yugoslavs train at Soviet plants

Soviet assemblymen have completed work on a coke furnace battery at the Zenica steel works, in Yugoslavia.

The Zenica works provides an example of the successful development of Soviet-Yugoslav economic, scientific and technological cooperation. The Soviet Union has assisted in the construction of a blast furnace, a converter shop and other pro-

jects here. Many Yugoslav steelmen were trained in the Ukraine, the Urals and Siberia.

The Zenica works is now undergoing renovation.

The Soviet Union has assisted Yugoslavia for many years in the re-equipment of its steel industry, having helped build 40 per cent of Yugoslav iron and steel facilities.

Contacts and contracts

● TASS and Rostel have signed a protocol in Moscow. It provides for continuing efforts to expand cooperation, including the joint use of means of communication and for mutual assistance in the distribution of general political and specialist news.

● According to figures issued by the Austrian Federal Economic Chamber, between January and October 1982, Austrian exports to the USSR rose by 22.1 per cent.

● The total Standing Franco-Soviet Commission has held its 17th session in Paris during which a wide range of issues was discussed concerning trade and economic links between the two countries.

● A protocol has been signed concerning trade between the USSR and Yugoslavia in 1983. This year, the exchange of goods is expected to top seven thousand million dollars' worth.

● Polish shipyards are now building several B-93 geo-physical vessels ordered by the USSR for exploring sea shells. The first such ship is to be launched in 1985.

METRO FOR WARSAW

The decision to build a Metro in Warsaw was taken last year. Today, Polish newspapers are already carrying photographs of the building sites.

The first line which will join the southern and northern parts of the city will help solve transport problems.

Soviet experts will give assistance to their Polish colleagues in the laying of the Metro tracks. Polish designers and engineers have already been to Moscow, Leningrad and Kiev where they have familiarized themselves with the technology of Metro construction. The Soviet Union will deliver cranes, welding machines, compressors and other technology and equipment for building the Metro to Poland. The carriages for the Warsaw Metro will also come from the Soviet Union.

IL-86—THE PRESENT-DAY WIDE-BODY AIRCRAFT FOR LINES WITH HEAVY PASSENGER TRAFFIC

The enhanced takeoff-landing characteristics, the high manoeuvrability on the ground and relatively low loads applied to airstrips allow for operating the IL-86 JET from airfields of the same class as those required for medium-size aircraft, such as IL-18, TU-134, TU-154, BOEING-727, DC-8 and others.

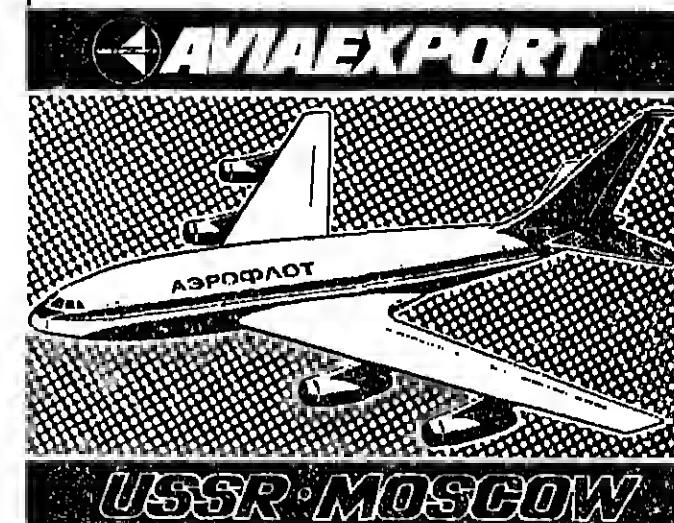
The state-of-the-art systems of automatic control and navigation fully provide for regular flights via optimized routes.

The spacious, comfortable interior with broad passages accommodates 350 passengers. The built-in airstair offers speedy embarkment and disembarkment independently of the ground services. With the maximum takeoff weight at 206 tonnes, the IL-86 JET takes to the air from airstrips 2,300 to 2,600 m long.

The cruising speed is 930 km/h. The practical range with the commercial payload of 40,000 kg is 3,600 km.

V/O AVIAEXPORT 32/34, Smolenskaya-Sennaya Pl. 121200 Moscow, USSR.

Cables: AVIAEXPORT MOSCOW. Telephone: 244-20-88. Telex: 411257 AVEX SU 411335 AVEX SU



Trade with Bulgaria

The Soviet Union is responsible for over 50 per cent of Bulgaria's foreign trade. In its turn, Bulgaria is one of the main Soviet trading partners.

By 1985, trade between the two countries will exceed the level of the past five-year period by 38 per cent.

By the mid-80s, with aid from the USSR more than 120 industrial, industrial facilities and technological lines will be expanded, reconstructed or modernized in Bulgaria. The Soviet Union is also to deliver equipment to the sum of 1.4 thousand million roubles.

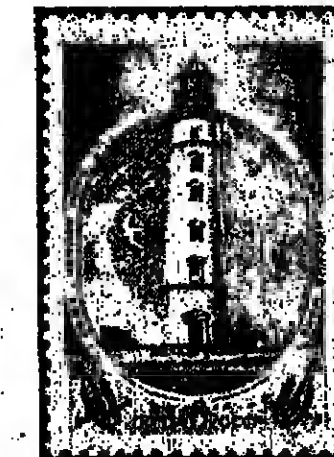
Servicing station for farm machinery in Angola

A new servicing station for farm machinery has gone into operation at the Angolan state-run cotton growing amalgamation (Caculo) in the Meian province. It was built with the help of Soviet specialists to carry out maintenance and repairs of cotton-picking combines, tractors and other farm machinery supplied to People's Angola by the Soviet Union.

The establishment of repair and maintenance services in Angola is an important field in Soviet-Angolan cooperation. Altogether 27 repair and servicing centres for farm machinery have been built in Angola with Soviet help. The Soviet Union also assisted in the construction of Africa's largest complex for servicing aircraft which is now in operation.

At present about 300 Soviet specialists are giving assistance to their Angolan friends in the operation, maintenance and repair of machinery and equipment supplied by the Soviet Union, and also in training Angolan technical personnel. During the past few years the educational establishments of Angola and the USSR have trained more than 6,000 drivers, mechanics and farm-machine operators.

Philately



LIGHTHOUSES IN STAMPS

The USSR Ministry of Communications has issued a series of four stamps depicting lighthouses on the Black Sea and the Sea of Azov. The 8-kopek stamp in our illustration shows the Kheleson lighthouse which was built in 1818 and which still guides the approach to the port of Sevastopol.

WHAT'S ON!

January 25-28

THEATRES

Kremlin Palace of Congresses (Kremlin), 25—A concert. Bolshoi Theatre performance. 26—Rossini, "The Barber of Seville" (opera). 26—Rimsky-Korsakov, "The Tsar's Bride" (opera).

Bolshoi Theatre (Sverdlov Sq. 26)—Molchaev, "Machath" (ballet). 27—Verdi, "Un ballo in maschera" (opera). 28—Shchedrin, "The Sea Gull" (ballet).

Stanislavsky and Nemirovich-Danchenko Musical Theatre (17 Pushkinskaya St.) 26—Khranikov, "A Son-in-Law Without Kith or Kin" (opera). 27—Dallbes, "Coppelia" (ballet). 28—Rimsky-Korsakov, "May Night" (opera).

Operetta Theatre (8 Pushkinskaya St.) 25—Karev, "The Merry Widow". 27—Kaiman, "The Gypsy Princess". 28—Kaiman, "Evening Violon".

Chamber Musical Theatre (72 Leningradsky Prospekt, 28, 27—Rostovsky, "Rostov Action".

EXHIBITIONS

Exhibition Hall, USSR Artists' Union (25 Gorky St.). An exhibi-

FILMS

And Justice for All (USA). About a lawyer who tries to fight the corruption in American legal proceedings.

Cinema: "Valchka" (5/8 Sverdlov-Chernomyrskaya St., Metro Lermontovskaya).

The Hit Tune of the Summer (Tallinn Studios, USSR). A musical featuring different pop groups.

CONCERT HALLS

Concert Hall of the Central Tourist House (148 Leningradsky Prospekt), 25, 26—A variety group from Yugoslavia. 27, 28—A jolly show by the Tallinn rock group Vitamin.

Central Concert Hall (1 Moskvo-vetskaya Embankment, at the Rossiya Hotel), 25, 26—Edward Kull with the Kamerton instrumental ensemble.

Leningrad Stadium, Small Sports Arena, (Luzhniki), 25-28—The Moscow Ballet on ice.

Exhibition Hall, Society for the Protection of Monuments (2 Kazina St.). "The Old Culture of Altai". An exhibition featuring weapons, copies of rock drawings and primitive glass figures. Daily, except Monday, noon to 7 p.m. Metro Ploshchad Nogina.

SPORTS

Central Army Club Sports Complex (39 Leningradsky Prospekt), 26—Winter tournament. 10 a.m., noon, 2 p.m. and 4 p.m.

Among the participants are teams from Moscow (Central Army Club), Kiev, Rostov-on-Don, Lvov, Kharkov, Odessa and other cities.

ICE HOCKEY

Ice Central Stadium, Palace of Sport, 26—Moscow Spartak vs. Torpedo. 27—Central Army Club vs. Kiev Sokol. 6.45 p.m. (both days).

VOLLEYBALL

Palace of Volleysport, Central Army Club (39 Leningradsky Prospekt), 26, 27, 28—USSR top-league championship. 6 p.m., 5.45 p.m., 7.30 p.m. (all days).

CHESS

Olimpiyskiy Sports Complex (Metro Prospekt Mira), 23-28—men's championship. 4 p.m. (each day).

RACING

Hippodrome (22 Beguysa St.), 26 and 28—Racing and trotting 6 p.m. (both days).

State Bank of the USSR

Foreign exchange quotations for January 16, 1983

Currency	Quotations in roubles
Canadian dollar	100 37.73
English pound sterling	100 111.44
Finnish markka	100 13.44

WEATHER

January 25-28

In Moscow, city and region, the N wind is expected to rise to SW and temperatures to rise.

Night temperatures of -3° to -7°C and of -1° to -5°C in the daytime. Light snow probable on some days.

TRANSPORT HOURS

Metro 6 a.m. to 1 a.m. Fare 5 kopeks. Trolleybuses: 6 a.m. to 1 a.m. Fare 4 kopeks. Buses: 6 a.m. to 1 a.m. Fare 3 kopeks. Trams: 6 a.m. to 1 a.m. Fare 3 kopeks. Taxi: 14-hour service, twenty minutes. To begin, plus 20 kopeks per kilometre. Ordering a cab: 24-hour service. Telephone 221-00-00. Communal cars: 100 to 40 minutes in the city. 7 a.m. to 10 p.m. Fare 1 kopek.